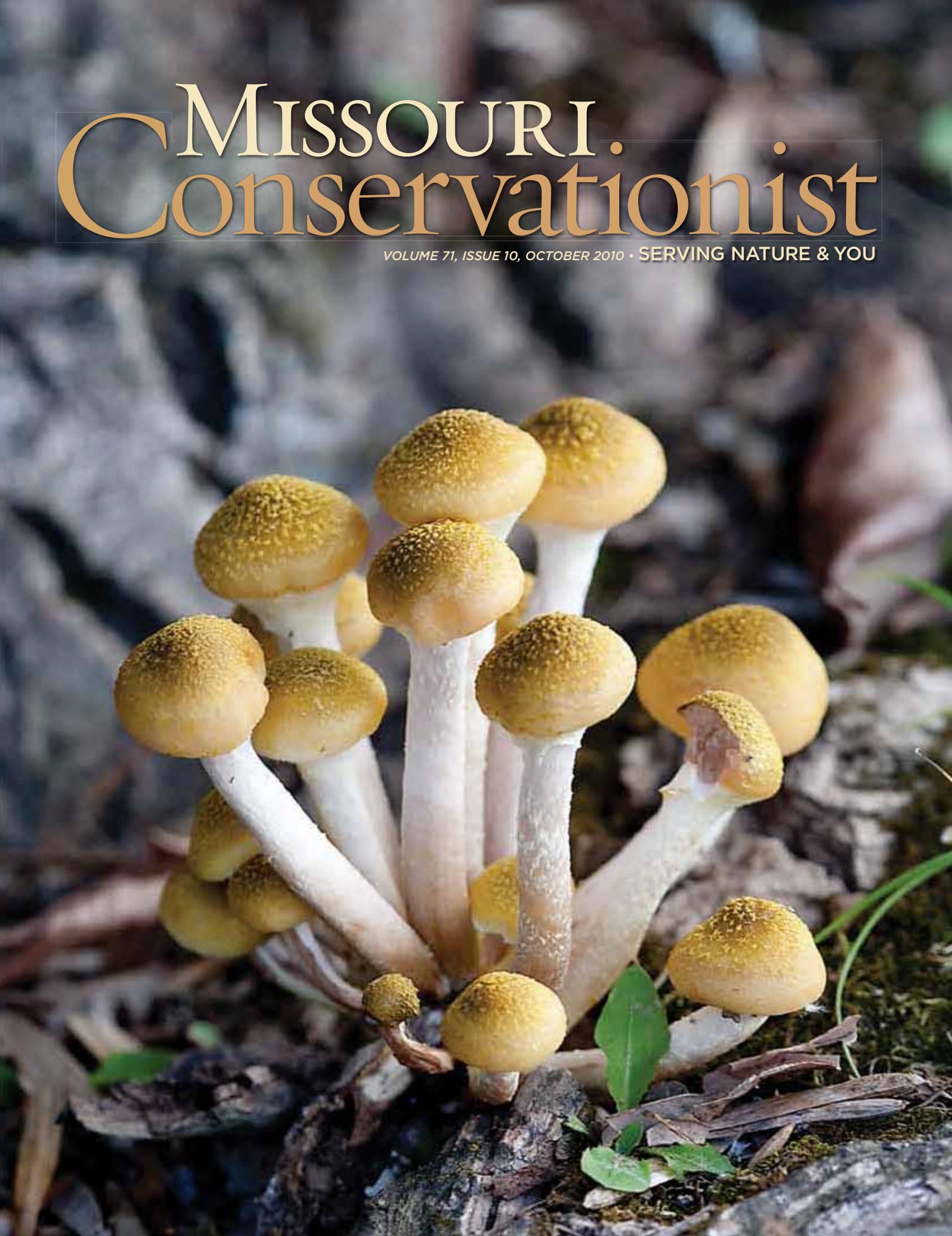


# MISSOURI. Conservationist

VOLUME 71, ISSUE 10, OCTOBER 2010 • SERVING NATURE & YOU



# Endless Outdoor Opportunities

Missouri's great outdoors provides endless opportunities to challenge the imagination, expand knowledge levels, test/grow skills and create lasting memories. A few weeks ago, my

youngest daughter, Lauren, and I spent time on a conservation area watching prairie-chickens in the west central portion of our state. Looking over the prairie's open vista of blooming colors documented the success of Missouri's citizen-created conservation system.

Across our state, more than 900 conservation areas provide citizens access to outdoor adventures. Whether you are interested in watching wildlife, hunting, canoeing and boating, target shooting, camping, fishing, hiking or spending time at a nature center, conservation areas are located in most counties.

Currently, the Department holds in public trust approximately 795,000 acres (i.e., 1.7 percent of Missouri's acres). Input received from individuals and communities reveals the important role conservation areas continue to serve. Surveys reveal that 91 percent of Missourians agree that outdoor places should be protected. Providing close-to-home opportunities and public access, to both urban and rural areas of the state, are two of the most often mentioned benefits. However, the enhanced quality of life, resource management and economic benefits associated with conservation areas are real and should not be overlooked.

It is important to note, the Department does make payments to counties for land held as conservation areas. County payments are annually made under the in-lieu-tax and forest cropland programs. These programs, along with an established review cycle for the in-lieu-tax program, help ensure county governments do not lose property tax revenues.

I fondly remember many days afield with my father, made

possible because conservation areas provided access to a fishing location, a campsite or wildlife habitat. These doors of opportunity, combined with spending time with family and friends, resulted in memories I continue to cherish.



**Greater prairie-chicken photographed by Director Robert Ziehmer's youngest daughter, Lauren, on a conservation area.**

I encourage you to visit the Department's website ([www.MissouriConservation.org](http://www.MissouriConservation.org)) or contact your regional conservation office (see Page 3) to become familiar with conservation areas and the diversity awaiting your visit. Then plan an adventure and enjoy Missouri's great outdoors.

The "click" of Lauren's camera captured a memory we will remember for years. The prairie-chicken stood for only a few photos before taking flight into the morning sky.

Missouri conservation areas provide citizens some amazing outdoor experiences. Take time to enjoy and introduce friends to our state's natural resources. I am interested in hearing about your adventures. Drop me a note and your favorite photo, taken on or associated with a conservation area, and I

will select one or two for use in the January issue of the *Conservationist*. Please either e-mail your photos to [readerphoto@mdc.mo.gov](mailto:readerphoto@mdc.mo.gov) with "director's photo selection" in the subject line, or mail it to *Missouri Conservationist*, director's photo selection, PO Box 180, Jefferson City 65102-0180.

A handwritten signature in black ink that reads "Robert L. Ziehmer". The signature is written in a cursive style with a large, looping flourish at the end.

Robert L. Ziehmer, director

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**OUR MISSION:** *To protect and manage the fish, forest and wildlife resources of the state; to serve the public and facilitate their participation in resource management activities; and to provide opportunity for all citizens to use, enjoy and learn about fish, forest and wildlife resources.*

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This conservation opportunity area is growing the past into the future.

Cover: Immature honey mushroom by Cliff White. The growing season is from August through November, and they are good to eat when young and fresh, but always make sure to cook them thoroughly.

Above: Chicken of the woods (*Laetiporus cincinnatus*) mushroom by Jon Rapp

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## WILD FUN

How lucky we are  
that our Missouri  
Department of

Conservation conserves game, fish and everything else in nature. I just read Maxine Stone's wonderful new book, *Missouri's Wild Mushrooms*, published by MDC. Last November we harvested three deer from our farm. All of the deer had been feeding heavily on oyster mushrooms, which we also enjoy. Properly caring for nature begins with knowing what things are. MDC has done a wonderful job of publishing materials that enhance our understanding and enjoyment of nature.

I also commend MDC for developing nature appreciation in our youth, as evidenced in the recent *Conservationist* articles *Discover*

*Nature Schools* [August] and *For the Love of Pine* [June]. Thank you for continually giving us new resources for enjoying and discovering nature.

*Dan Drees, Eminence*

Thank you for recognizing Mike Brooks and the staff at the Andy Dalton Shooting Range in the August issue [*Beyond the Classroom*]. Two years ago, Springfield Public Schools partnered with Bass Pro Shops and Wonders of Wildlife to open the WOLF school (Wonders of the Ozarks Learning Facility) as a Choice school for 5th graders interested in the outdoors. Mike and his staff were there to piece together the foundations of our conservation science curriculum and plan our field experiences. With their help, the program was instantly successful. Since then, they have continued to support us overwhelmingly with time, equipment and expertise. Because they recognize the value of starting early, there are many more youth using and enjoying the Missouri outdoors who will carry their stewardship

of fish, forest and wildlife resources into adulthood. When you have the kids, you have the family.

*Sue Dyle, teacher, via Internet*

## PHOTO FOLLOW-UPS

I love your photo on the front of the September issue. You didn't identify it other than as a Missouri forest but I knew exactly where it was taken. I've taken that same photo myself. I've been to Ha Ha Tonka several times and looked over this view, but the best time is in the fall when the leaves are as they appear in your photo. Ha Ha Tonka is a Missouri wonder and this old dead tree has been hanging on for a lot of years, I took my picture of it in 2001 on a 35mm camera. The best time to go is mid-October for the color. I'm betting I'm not the only one who recognizes this tree!

*Elaine Herron, Warsaw*

On Page 15 [September] is a photo of Barton Fen by David Stonner. Where is Barton Fen? Do you know how it was named?

*William A. Sullivan, via Internet*



### Reader Photo

### COCOONED

Rozanne Kennedy of St. Charles submitted this image she captured in her backyard. "I love the photo," says Kennedy, "even though when I researched it and found out what it was, I was a little creeped-out." This tobacco hornworm has been parasitized by a braconid wasp. An adult wasp implanted its eggs in the caterpillar. After the wasp larvae finished feeding within it, they emerged from the caterpillar's body and formed the white cocoons, where they will go through the pupa stage before emerging later as adults.

*Photographer's note: Barton Fen is located along Neals Creek on the Ozark Trail south of Bixby. The photograph you are referencing was taken of the treeline along Neals Creek while I was standing in Barton Fen, and the photo is not of the marsh itself. I noticed a few road signs that said Ray Barton Road on them. I assume it was a historical family from the area, but I cannot be sure. A little searching turned up a Ray Barton from Bixby who lived from 1924 to 1995. Perhaps Barton owned the land on which the fen is located.*  
—David Stonner, nature photographer

I got my September issue yesterday and only today have been able to get past the cover. Mr. Paothong's photos are always wonderful but this will be the first time after many issues that I will have framed your cover. I have a passion for trees but especially love to see the old, gnarled, beautifully (in my eyes) shaped trees still sinking in their roots and living. Thank you so much...and now I'll be able to go on and read the rest of the magazine.

*Mary Ellen Burdick, via Internet*

# MISSOURI Conservationist

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## MDC Online

Discover more about nature and the outdoors through these sites.

**Blog:** [www.MissouriConservation.org/node/109](http://www.MissouriConservation.org/node/109)  
**Facebook:** [www.facebook.com/MDCOnline](http://www.facebook.com/MDCOnline)  
**Flickr:** [www.MissouriConservation.org/20010](http://www.MissouriConservation.org/20010)  
**Kid's site:** [www.XplorMo.org](http://www.XplorMo.org)  
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## Quick Draw Reservation System Goes Live Oct. 22

Duck hunters who plan to hunt at Grand Pass, Eagle Bluffs and Otter Slough conservation areas (CAs) should remember that reservations for these areas will be handled under the experimental Quick Draw system this year.

Quick Draw is an online-only reservation system. Grand Pass CA will be the first area to test the new system, because it is in the North Zone. Applications to hunt during the first three days of the 2010 duck season will open at 12:01 a.m. Oct. 22 and close at 3 p.m. Oct. 25. Results will be available after midnight that day. Successful applicants will be notified by e-mail or text message if they provide contact information. They also can check the results online.

Eagle Bluffs and Otter Slough CAs are in the Middle Zone, so applications for reservations the first three days of the season at those areas will run from 12:01 a.m. Oct. 29 and close at 3 p.m. Nov. 1. Results will be available after 12:01 a.m. Nov. 2.

After the initial drawing in each zone, Monday drawings will award reservations for Friday through Monday. Applications will be open from Monday through Wednesday to assign reservations for Tuesday through Thursday.

Quick Draw will handle reservations for handicap-accessible blinds at the three Quick Draw pilot areas. The trial will not affect youth hunts, which will be handled as in the past.

This year's limited trial of Quick Draw will

enable the Conservation Department to evaluate whether the system achieves its goal of making hunting more convenient and accessible to more hunters. Depending on how well it works, the system could be modified and expanded to other state-managed wetland areas. More information about Quick Draw is available at [www.MissouriConservation.org/node/8945](http://www.MissouriConservation.org/node/8945).

## Waterfowl Seasons Coming Up

Duck-hunting prospects are bright again this year, with a liberal season and strong duck and goose numbers. All that is needed for a great hunting season is the right weather.

This year's hunting regulations include several changes.

The North and Middle Zone youth waterfowl seasons run concurrently to avoid conflict with youth deer and quail seasons.

The daily limit on pintails increased from one to two.

The daily limit on Canada geese has increased. Instead of being three during the early season and two for the rest of the season, the limit is now three for the entire hunting season statewide.

Season dates are:

Ducks — North Zone:

Youth season Oct. 23 and 24

Regular season Oct. 30 through Dec. 28

Ducks — Middle Zone:

Youth season Oct. 23 and 24

Regular season Nov. 6 through Jan. 4

Ducks — South Zone:

Youth season Nov. 20 and 21

Regular season Nov. 25 through Jan. 23

This year's season for Canada geese and brant is Oct. 2 through 10 and Nov. 25 through Jan. 31 statewide. The season for blue, snow and Ross's geese is Oct. 30 through Jan. 31 statewide. White-fronted goose season is Nov. 25 through Jan. 31 statewide. The Light Goose Conservation Order is Feb. 1 through April 30, 2011.

Full details of waterfowl hunting regulations are available in the *2010–2011 Waterfowl Hunting Digest*, available wherever hunting permits are sold or online at [www.MissouriConservation.org/node/5646](http://www.MissouriConservation.org/node/5646).

## Latest Zebra Mussel Battleground

The Conservation Department took quick, decisive action in August to nip a new zebra-mussel infestation in the bud. After discovering the invasive mollusks at Smithville Lake's Camp Branch Marina, fisheries workers treated the water in the area with nearly 400 gallons of commercial algaecide. The active ingredient in the algaecide, copper sulfate, is toxic to mussels but is not expected to cause significant damage to fish or other aquatic species and did not pose a threat to boaters, skiers, swimmers or their equipment

or adversely affect drinking water drawn from the lake. Department staff is monitoring the area around the marina and has found no young zebra mussels so far. Long-term monitoring of the entire lake continues. The Missouri *Wildlife Code* prohibits transporting zebra mussels and other prohibited species into, out of or within the state. Boaters can unwittingly transport the mollusks when trailering boats from one body of water to another. For more information on zebra mussels and other invasive species, visit [www.MissouriConservation.org/node/4086](http://www.MissouriConservation.org/node/4086).



Zebra mussels



## ASK THE OMBUDSMAN

**Q:** Why are the small orange beetles with the black spots swarming onto the side of my house?

**A:** Asian lady bugs, or lady beetles, were both accidentally and intentionally brought to the U.S.

several times, beginning in 1916. They serve a useful purpose in controlling insect pests of crops and other plants but they may be responsible for declines in numbers of native lady bugs. In recent decades they have become a pest of many homeowners, although they will not harm houses, people or pets, other than some minor staining on walls or carpets. Each fall, during a warm-up following the first cold weather,

the insects gather on the sunny sides of houses and other structures as they look for cracks and crevices where they can find shelter for the coming winter. They will get into houses where unsealed cracks allow access to crawl spaces, attics and walls. Many will survive the winter and



Asian lady bug

appear again in the spring as temperatures warm and they try to exit the house. A thorough Internet reference that includes control recommendations is: [ohioline.osu.edu/hse-fact/1030.html](http://ohioline.osu.edu/hse-fact/1030.html).



Blue jay

**Q:** Can you explain why the blue jays are making repeated trips along the same route over my forest this fall?

**A:** It is a common sight to see those industrious birds getting ready for winter by storing food in the fall. Blue jays are known to carry away and bury nuts as far as a mile or more from the source tree, a practice known as nut caching. They will make trips with one to several of the smaller acorns. Studies indicate that a single bird may cache up to several thousand nuts in a season. They bury and cover them in shallow soil, and the nuts that are not relocated are usually able to germinate and grow, making the blue jay an important factor in the spread of oaks.

Ombudsman Tim Smith will respond to your questions, suggestions or complaints concerning Department of Conservation programs. Write him at PO Box 180, Jefferson City, MO 65102-0180, call him at 573-522-4115, ext. 3848, or e-mail him at [Ombudsman@mdc.mo.gov](mailto:Ombudsman@mdc.mo.gov).

## Ruffed Grouse Season Closed

Missouri will not have a ruffed grouse hunting season this year for the first time in more than 25 years. However, the Missouri Department of Conservation says that does not necessarily mean ruffed-grouse hunting is gone from the Show-Me State forever.

Acting on a recommendation from its staff, the Conservation Commission voted earlier this year for an emergency closure of the grouse season, which was to run from Oct. 15 through Jan. 15. Low grouse population numbers were

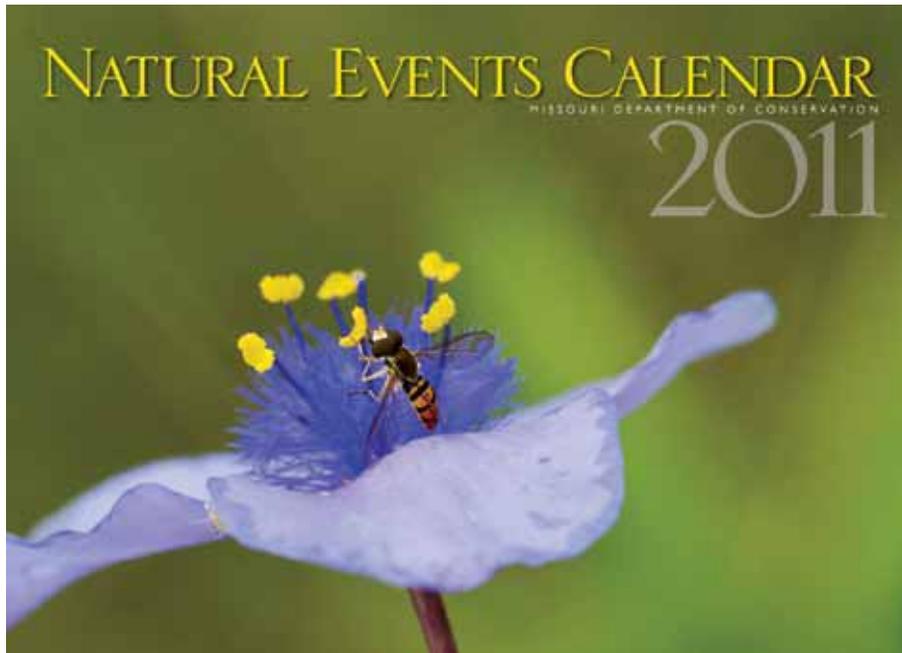
cited as the reason for the emergency closure. The action supersedes information printed in the *2010 Summary of Hunting and Trapping Regulations*, which were printed before the decision to close grouse season.

Ruffed grouse are native to Missouri, although the Show-Me State is near the southwestern edge of the species' historic range. Habitat destruction and unregulated market hunting largely eliminated them from Missouri forests by the 1930s.

The Conservation Department launched a



Ruffed grouse



## 2011 Natural Events Calendar Available

What costs \$7, lasts 12 months and makes you smarter and happier every day? If you guessed the Natural Events Calendar, go to the head of the line to buy a copy of the 2011 edition. Next year's calendar goes on sale this month at conservation nature centers and regional offices statewide. It includes photos of a bald eagle hunting, a perched snowy owl, white pelicans in a feeding frenzy, a red fox scanning the forest for prey, a stunning waterfall landscape bedecked with wild azaleas and the disk of the Milky Way Galaxy rising over Hughes Mountain Natural Area. Of course, daily notes about seasonal happenings outdoors remain among the calendar's top attractions. Added features next year include a "Get Out and Explore" section with photos from spectacular places you might want to visit and a guide to introducing children to nature. The calendar sells for \$7 per copy, plus shipping and handling and sales tax where applicable. You also can buy copies by calling toll-free 877-521-8632 or through The Nature Shop, [www.mdcNatureShop.com](http://www.mdcNatureShop.com).

successful ruffed-grouse restoration program in 1959, and Missouri had its first modern hunting season in 1983. Earlier this year, the agency's Regulations Committee recommended closing the season. This was partly because grouse numbers remain low in spite of repeated attempts to reintroduce grouse in areas with suitable habitat as late as 1994. Closing the season also made sense because the Conservation Department and the Ruffed Grouse Society are seeking a source of grouse to resume reintroduction work.

"Our grouse numbers are so low right now that very few hunters pursue them, and very few are taken each year. This is probably a good time to pause and regroup," said Wildlife Division Chief DeeCee Darrow.

Ruffed grouse are ground-nesting birds closely related to quail. They are much larger, however, with adults averaging more than a pound compared to 5 or 6 ounces for adult bobwhite quail. Bobwhites favor habitat with large amounts of pasture, row crops and other open land interspersed with shrubby cover. In contrast, ruffed grouse are adapted to a patchwork of forest and the dense vegetation that develops on land where timber harvests have occurred.

## Appeal of Ripley County Judgment

The Conservation Commission is appealing a judgment by Ripley County Circuit Court that three state regulations prohibiting the use of motorized vehicles and dogs in deer hunting are constitutionally vague. The ruling followed a case involving two Ripley County hunters who sued over the regulations. At issue are Missouri *Wildlife Code* regulations that prohibit the use of “motor-driven air, land or water conveyances” while deer hunting and regulations stating that deer may not be “hunted, pursued, taken or killed with the aid of dogs, in use or possession.”

## Youth Trapper Education Clinic

Join the staff of the Missouri Department of Conservation along with volunteers from the Missouri Trappers Association for this fun and exciting educational clinic. The clinic runs Oct. 23 and 24 on the Whetstone Conservation Area near Williamsburg in Callaway County. Participants will learn basic trapping techniques including water sets, dry land sets, trapping equipment care and maintenance, skinning, fleshing and proper fur handling.

While under the guidance of experienced trappers, participants will set their own traps. There is no fee for this training, but pre-registration is required. Participants should bring snacks and drinks. Dinner will be served on Saturday evening and breakfast on Sunday. This program is open to youth ages 11 to 17 and their parent or adult mentor. For more details or to register, call 573-884-6861. For more information about hunting and trapping in Missouri, visit [www.MissouriConservation.org/node/88](http://www.MissouriConservation.org/node/88).

## Cash for Reporting Tagged Catfish

The only thing anglers like as much as fishing is telling fish stories. The Missouri Department of Conservation will pay up to \$150 for your story if you catch the right catfish. In its continuing effort to put catfish management on a firm scientific footing, the Conservation Department has tagged thousands of catfish in lakes and streams throughout the state. Anglers who catch those fish can get cash rewards of up to \$150 for reporting their catches, along with some basic information about the fish. This



## Show You Care, Join Share the Harvest

Hunters donated more than a quarter of a million pounds of venison through the Share the Harvest program during the 2009–2010 hunting season, pushing the total for the program to more than 2 million pounds. Program officials say Share the Harvest has the potential to deliver that much meat to the needy annually. Share the Harvest works because people all over Missouri set up local programs to bring together hunters and sponsors who pay to have deer processed into lean, protein-rich ground venison. Missouri still has more than 30 counties without Share the Harvest programs. Most counties that do have programs could easily support more. This is an excellent service project for charities, churches, civic clubs or sporting groups to organize. Share the Harvest also is an opportunity for businesses or others to demonstrate their civic-mindedness through financial support. For information about how to get started, visit [www.MissouriConservationist.org/node/2544](http://www.MissouriConservationist.org/node/2544), call 573-634-2322, or e-mail [mofed@socket.net](mailto:mofed@socket.net).

includes its length and when and where it was caught. The information provides valuable insights about catch rates, fish life expectancy, growth and movement.

Tagged catfish are swimming in parts of the Fabius, Gasconade, Grand, Lamine, Marmaton, Platte, South Grand rivers, the upper Mississippi River near Hannibal and the Missouri River around the mouths of the Platte, Grand, Lamine

and Gasconade rivers.

Reporting is easy. Just clip off the plastic “dangler” tag where it’s attached near the fish’s dorsal fin, and call the phone number on the tag. You will be asked to mail in the tag, but it will be returned to you later.

To learn more about the Conservation Department’s catfish management work, visit [www.MissouriConservation.org/node/5211](http://www.MissouriConservation.org/node/5211).



# Calling All Quail

Partners provide funding and expertise for habitat improvements.

by CHRIS CANIPE • photos by DAVID STONNER

**R**on Graef would like to see some quail on his new farm in Shannon County, but so far the birds have eluded him.

“I’ve got lots of deer, and I’ve got some turkey,” he says. “Quail is what I’m after right now.”

The farm has plenty of open space, and the earthbound birds are abundant in southern Missouri. But when he bought the farm, the vegetation wasn’t very accommodating. Brush, trees and invasive weeds had taken over, and the timber stand on the property was overgrown. Graef knew he would have to put in a lot of work if it was going to be inviting to quail and other wildlife. With the help of an enthusiastic Missouri Conservation Department employee, he’s well on his way.

Graef owns land in Howell and Shannon counties, in the heart of southern Missouri’s forested breaks. Now retired, he lives in St. Charles but says he gets away at least once a week to visit his mother in Mountain View.

“I grew up in St. Louis,” Graef says. “My mother was originally from that part of the country. When property became available I

bought my first 40 acres. That was 40 years ago.”

Graef bought the 37 acres east of Mountain View last year. He says buying land in the area was a personal investment.

“I guess I looked at it as a good place to retire,” Graef says. “I’ve always liked to work outside. It was priced right. I’ve had ancestors in that area since the turn of the century.”

An earth contact home on the property was a big selling point. He has plans to put solar panels on the roof—one of many projects aimed at creating a sustainable wildlife-friendly retreat. Much of the work, however, would involve improvements to the property itself.

“I have a farm plan that says I want to work on being self-sustainable and environment friendly,” Graef says. “The property had been run down for quite a few years, so I contacted Mike and we set about looking at it. We decided we could do some woodland management and some things for the wildlife habitat.”

Mike is Mike Gaskins, a private land conservationist with the Missouri Department of Conservation who works out of Eminence.



Graef asked Gaskins to help him put together a plan to thin the timber stand and fill the pastures with grasses and vegetation that would be inviting to wildlife. Gaskins was more than happy to help.

“Here we have this piece of land he wanted to manage and he’s kind of unsure on how to progress,” Gaskins says. “When it comes down to it, I work for the landowner in my district.”

Gaskins helped Graef apply for cost-share assistance through the Department, and Graef has been able to do most of the work himself.

He removed much of the brush and cedar that had taken over the fields. He also went after a particularly menacing invader called serecia lespedeza. The tough and woody forb grows 2 to 3 feet high and tends to crowd out other plants. Once established, it can take over entire fields and be very difficult to remove.

“This is not something desirable at all,” Gaskins says. “It produces a lot of seeds, the seeds stay viable for a long time in the soil, and animals don’t eat it.”

Graef applied herbicide, fertilizer and lime to the field and plans to stage a few controlled burns with Gaskins’ help. They have already seeded the newly-clean pasture with oats, orchard grass and clover. Gaskins says the effort changed the character of the field dramatically.

“It went from something that had very minimal value to wildlife to something valuable to both wildlife and to grazing, if he was going to do that in the future,” Gaskins says.

With healthier fields in place, they turned their attention to the surrounding timber. Forests need to be thinned from time to time—a job traditionally performed by the occasional presettlement fire. Unformed, unhealthy or non-native trees can crowd out the healthier ones. Gaskins’ job as a forester is to work with landowners to identify and remove the undesirable trees in order to give the healthier ones room to thrive.

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**Shannon County landowner Ron Graef talks with Private Lands Conservationist Mike Gaskins about thinning forest on his land. Unformed, unhealthy or non-native trees can crowd out the healthier ones, and it is Gaskins' job to identify and remove the undesirable trees in order for healthier ones to thrive.**



“It’s the same idea as having a handful of seed corn,” Gaskins says. “If you put all of your seed and just plop it down, it won’t produce much corn because there’s too much competition. But if you thin them and give them more space between the sprouts, you’ll get more corn.”

Gaskins encouraged him to apply for assistance through a federal program called the Environmental Quality Incentives Program, or EQIP.

“He was able to get some money through them and now he’s back in action,” says Gaskins.

Randy C. Miller is the district conservationist with the U.S. Department of Agriculture and happens to share an office with Gaskins. Miller says the federal programs are sometimes able to provide backup to those run by the state.

“If a project is too large to fund, they’ll refer them to us,” Miller says. “Normally it’s done at a local level. We’re in these field office service areas where a lot of agencies are combined under the same roof. That makes it easier for these landowners to come into the office and get the assistance they need from the same agencies.”

Miller helped Graef qualify for cost-share assistance, which he will be able to put toward

tree removal and fence building. The money will also help Graef do some edge feathering, which likely will help attract quail.

“Edge feathering creates a transition from the woodland to grassland area,” Miller says. “The purpose is to create a lot of nesting habitat for the turkeys and the quails. After you drop the trees, a lot of the shrubby-type plants like sumac come in. It kind of creates another area in there.”

Miller says his department’s work with Graef demonstrates the benefits of cooperation between state and federal agencies.

“I think this is a really good example of the two agencies working together to help a landowner accomplish his goals,” Miller says. “I know Mr. Graef has a strong interest in conservation and wanting to improve wildlife habitat.”

Graef says he would do the work even if the money wasn’t there to help, but the real value in working with the Conservation Department is the advice he gets.

“My main objective is to get help from guys like Mike so I don’t make mistakes,” he says.

And of course, to see some quail. With thinner forests and flourishing fields it should just be a matter of time. ▲

**Graef and Gaskins check out the edge feathering on the farm, which will help attract quail. Graef qualified for cost-share assistance, which will help him pay for the improvements.**





by JIM LOW • photos by DAVID STONNER

# AIR GUNOMICS

*The powerful air rifle adds a new dimension to deer hunting.*

**J**EFF COX, AGE 14, MADE HISTORY on Oct. 5, 2008, when he bagged a whitetail doe in the west St. Louis County suburb of Wildwood. It was the third day of Missouri's urban deer hunt, the earliest portion of Missouri's firearms deer season, and 2008 was the first year in modern times when it was legal to hunt deer with air-powered rifles. As far as anyone knows, Cox was the first Missourian to take a deer with an air rifle.

You might be scratching your head wondering how he managed to kill a deer with a BB gun. That is exactly the sort of skepticism that Cox's father, Ken, faced when he asked the Conservation Department's Regulations Committee to make air-powered rifles a legal method for hunting white-tailed deer.

Like many adults, Ken's interest in air guns began early. As a teenager, he hunted rabbits and squirrels with small-caliber air guns. His interest in air guns continued into adulthood, and he occasionally wondered when someone was going to develop an air rifle powerful enough for deer hunting. Then one day an online search turned up a large-caliber air-gun maker right here in Missouri.

It took several years, but he finally got his own .458-cal. rifle made by Dennis Quackenbush, of Urbana. Ken and Jeff have taken six deer with it so far, but before they could take aim at a deer, they had to score a bull's-eye with a task force created by the Conservation Department's Regulations Committee to investigate the matter. Ken was confident that the idea would sell itself if Regulations

Committee members could see a large-caliber air rifle in action and shoot it themselves, so he took them to the shooting range.

Once they saw what an air gun could do, they were convinced. Starting in 2008, Missouri hunters could use air guns .40 cal. or larger for deer hunting, as long as they can be charged only from an external, high-compression power source, including external hand pumps, air tanks or air compressors. These requirements ensure adequate power for producing clean, quick kills.

To see what air guns were all about, I spent an afternoon with Ken and his air gun at the St. Louis County Police Range. What impressed me most were the rifle's light recoil and minimal noise. I am used to the kick of my .30-06 Springfield, but I can't say I am fond of the kick or the rifle's deafening roar. The Quackenbush rifle barely nudged my shoulder when it spit out a cylindrical lead bullet weighing 425 grains (a tiny bit less than one ounce). The report was so mild, I felt a little silly wearing earplugs.

Ken's deer rifle gets its power from a carbon-fiber tank containing air under 4,500 pounds per square inch (psi) of pressure. This is the same tank firefighters use to breathe in smoke-filled buildings. A single charge is enough for three full-power shots. You can get more shots during target practice by using lighter bullets.

Ken's 425-grain, hollow-point lead bullets are huge compared to the brass-jacketed bullets used in most center-fire rifles. My .30-06, a venerable favorite cartridge among deer hunters, typically is loaded with 165-grain bullets for deer hunting.

**In 2008, Jeff Cox took the first deer under Missouri's newly expanded air rifle regulations.**



COURTESY OF KEN COX

## >> How it Works

Airguns work by using a burst of compressed air, rather than gunpowder, to force a projectile out of a barrel. Though spring-piston, pneumatic and CO2 types are available, only pneumatic air guns have been approved for deer hunting in Missouri. While a variety of configurations are possible, in

this example, when the trigger is pulled, the spring-driven striker pushes the valve stem forward, opening the valves and allowing air from the precharged air reservoir to enter the system and press upward into the chamber, propelling the bullet out of the barrel.

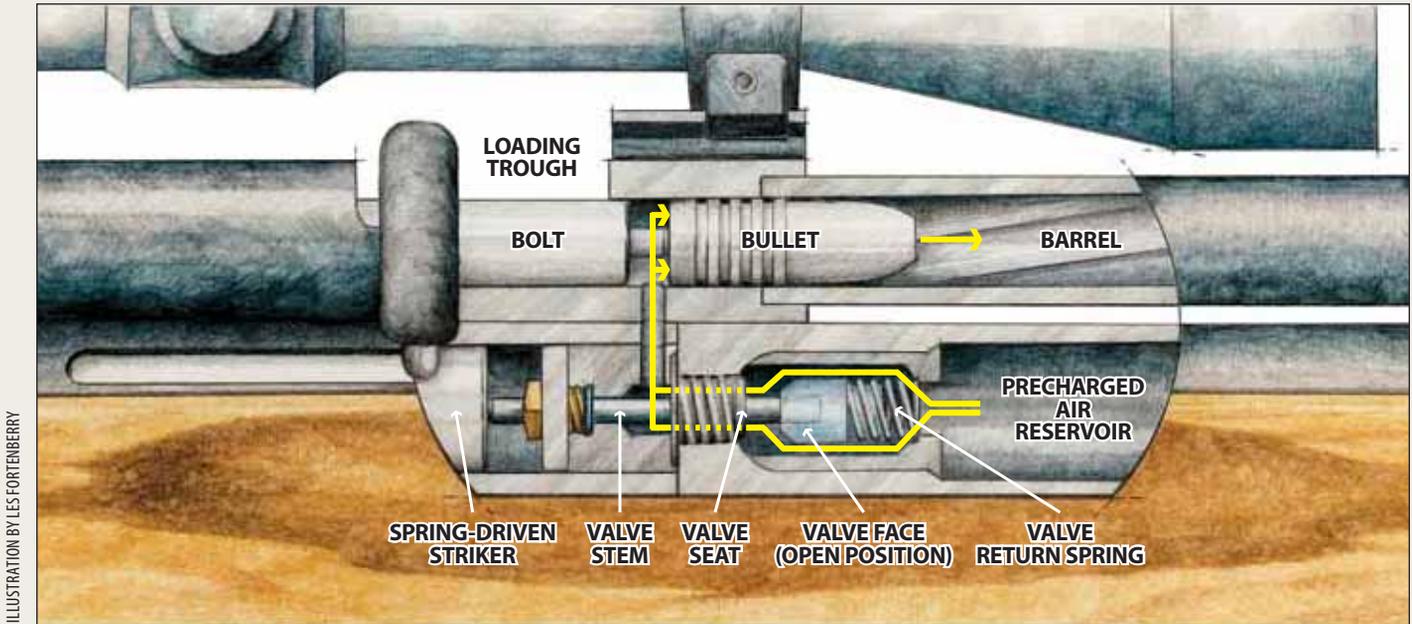


ILLUSTRATION BY LES FORTENBERRY

## >> Fire Power

Pneumatic guns use pre-compressed air from an external, high-compression power source. A special hose with a pressure gauge is used to siphon air from the source and into the air gun's precharged air reservoir.



While air-gun bullets are nearly three times as massive as those of conventional deer rifles, they are not nearly as fast. Bullets leave the muzzle of Ken's Quackenbush rifle traveling at 750 fps. A .30-06 bullet zips along at nearly 2,800 fps, nearly four times the speed of Ken's projectiles.

This has a couple of practical implications for air-gun hunters. First, they cannot shoot as far as hunters using conventional rifles. Bullets begin falling the moment they leave the muzzle, so a bullet traveling one-quarter as fast as a modern rifle bullet

drops four times as far in the time it takes to reach the target.

Partly because of bullet drop, Ken will not take shots at deer much beyond 50 yards. In contrast, a skilled marksman can easily shoot a deer at more than 200 yards with a .30-06. Pushing through air causes bullets to lose speed after leaving the muzzle. This reduces their ability to penetrate hide, flesh and bone, and is another reason why Ken hesitates to try shots beyond 50 yards.

Another avid air-gun deer hunter reduces this disadvantage by using

## AIR GUN HISTORY

Air-powered guns date back at least to the 16th century. In the late 18th and early 19th centuries, the Austrian army used .463-cal air guns capable of firing 22 shots on a charge. Lewis & Clark took an air rifle on their expedition in 1804-06 and amazed Indians with a rifle powerful enough to drive lead balls into a tree trunk and capable of firing 40 shots from one charge. For more information about this rifle, see <http://www.beemans.net/Lewis%20&%20Clark%20Airgun.htm>.



Ken and Jeff Cox know that air rifles cannot shoot as far as conventional rifles, so they hesitate to take shots beyond 50 yards. Bullets begin falling the moment they leave the muzzle, so a bullet traveling one-quarter as fast as a modern rifle bullet drops four times as far in the time it takes to reach the target.

lighter bullets. Nick Hammack, of Richland, loads his Quackenbush rifle with .45-cal. round lead balls weighing 143 grains. With the same air power behind them, these lighter bullets travel faster, making slightly longer shots practical. During the 2009 firearms deer season, Hammack shot a nine-point whitetail buck at 124 paces using a round ball. A long-time competitive shooter, Hammack understood his rifle's capabilities well enough to know how much the lead ball would drop at the distance and compensate for it.

In spite of their limitations, air guns still are more than powerful enough for deer hunting. Hammack says he rarely recovers a bullet from a deer carcass. Most pass completely through the body.

Penetration is not the only measure of power, however. Bullets from center-fire rifles travel so fast that they generate shock waves when they strike living tissue. This "hydro-shock" effect helps disable deer. Air-rifle bullets travel much too slowly to create hydro-shock. Consequently, hunters must hit a deer's lungs to cause a quick kill with air guns.

In this respect, air rifles have much more in common with crossbows than center-fire rifles. A double-lung shot with an arrow or a low-velocity bullet quickly shuts down a deer's respiratory system, causing unconsciousness within seconds. Ken Cox

said all six deer he and his son have shot fell within sight of their stands. Ken's last kill, a nine-point buck, got just 20 yards before collapsing.

In some ways, air rifles' low velocity is an asset. The modest power of large-caliber air rifles means virtually no recoil. This is not a big deal to the average hunter, but it could make the difference between hunting and not hunting for those with shoulder or spinal injuries.

Like arrows or shotgun slugs, bullets fired from air rifles do not travel far if they miss their targets. Some cities, like Wildwood, where the Coxes hunt, permit hunting with air rifles in the city limits to help reduce deer overpopulation and the attendant deer-vehicle accidents and property damage. Besides dramatically reducing the risk of line-of-fire accidents, air guns are much less noisy than conventional rifles.

The Quackenbush rifles Jeff and Ken use are 44 inches long and weigh 8 pounds, 6 ounces. That is longer and heavier than most conventional deer rifles, but comparable to traditional muzzleloaders. Like muzzleloaders, the Cox's air-powered deer rifle can fire only one shot at a time, although reloading is easier. All they have to do is place another bullet in the breech and close it.

Missouri seems to be in the vanguard of air-gun hunting. Ken says he knows several out-of-state hunters

who have started coming to Missouri to take advantage of a deer-hunting opportunity their states do not offer. I question whether air-gunning will ever be popular enough to provide a significant boost to the state's economy, but we certainly can use help controlling suburban deer populations.

For the Coxes, the challenge of taking deer with an air rifle adds a new dimension to hunting.

"I have taken deer with high-powered rifles, muzzleloaders and archery equipment," said Ken, "but the challenge and satisfaction of harvesting deer with a large bore air gun has me hooked!" ▲

## WHERE CAN I GET ONE?

If you would like to have an air rifle you will have to get in line. Demand for custom-made air rifles is big, and the supply is small.

Mass-produced versions are available. Search online for "large-caliber air rifle" to find suppliers. Expect to pay \$600 or more for a new, factory-made air rifle suitable for deer hunting. This is in line with the cost of many of the better factory-made standard deer rifles.

## BE PREPARED

Before you begin any hunt, be sure you know the applicable regulations in the *Wildlife Code* and city ordinances. To view *Wildlife Code* regulations online, go to [www.MissouriConservation.org/hunting-trapping](http://www.MissouriConservation.org/hunting-trapping).



Black trumpet

# FALL FOR Wild

Hunt for a tasty reward beyond the spring season.

by MAXINE STONE

# MUSHROOMS

**It's a toss-up.** I love spring when it comes. But I also love autumn when it arrives. Which do I like best? It's hard to say. Both give me a sort of high, an adrenaline rush. Spring with its rebirth of nature, seeds emerging into living plants, flowers popping with magical color and morels scooting their little bodies up out of the earth. But autumn—there is something crunchy and fresh and exhilarating about autumn. There are also more edible mushrooms in autumn than any other season.

Many people only think of morels when they think of edible Missouri mushrooms. But autumn brings so many other good and easy-to-find edibles. Did you ever hear of hen of the woods (*Grifola frondosa*), blewits

(*Lepista nuda*) or lobsters (*Hypomyces lactoflourum*)? These are choice fall mushrooms. You might even find some lingering chanterelles (*Cantharellus cibarius*, *C. lateritius*), chicken of the woods (*Laetiporus sulphureus*, *L. cincinnatus*), black trumpets (*Craterellus cornucopioides*) or oysters (*Pleurotus ostreatus*). These are wonderful mushrooms that fruit earlier in the season, but can also fruit in the fall.

It's so much fun to go looking for these prizes. But it's very important to be 100 percent sure of what you have as there are a number of poisonous look-alikes. We are all so eager to find the good edibles that sometimes we overlook the perfect identification. ▲

DAVID STONNER



MAXINE STONE

## Hen of the Woods

Hen of the woods love oak trees. They grow at the bottom around the trunk. Often they are hard to see, because their color can blend in with fall leaves. But when you find one, it may be enough for a small army. Look for a large rosette with spoon or fan-shaped caps. Hens are hearty and meaty and make a wonderful mushroom soup.

### HEARTY “HEN” SOUP

by Maxine Stone • Serves 4-6

**2 cups onion, chopped**  
**2 tablespoons plus 1 tablespoon butter**  
**3 cups Hen of the Woods, sliced**  
**1–2 teaspoons dill weed**  
**1½ cups plus ½ cup vegetable stock**  
**or water**  
**1 tablespoon tamari**  
**1–2 tablespoons Hungarian paprika**  
**3 tablespoons flour**  
**1 cup milk**

**2 teaspoons fresh lemon juice**  
**Salt and pepper**  
**Chopped parsley (optional)**  
**Thick Greek yogurt (optional)**

Sauté the onion in 1 tablespoon butter over medium heat. Add the mushrooms, dill, ½ cup stock or water, tamari and paprika. Cover and simmer for about 15 minutes.

In a large pot, melt 2 tablespoons butter. Whisk in flour and cook a few minutes while continuing to whisk.



STEVE ADAMS

Add milk. Cook over low heat until thick, stirring frequently, about 10 minutes. Stir in mushroom mixture and 1½ cups stock or water, lemon juice, salt and pepper. Cover and let simmer for about 10 more minutes.

Garnish with chopped parsley and/or thick Greek yogurt.

This has a deep, delicious flavor. Serve it with salad and a good bread. Mmmmm.

# Lobsters

Lobsters, oh lobsters! These may be my very favorite fall mushroom. They can be found in mixed woods, but seem to like pines best. After you find one, look for bumps in the ground, as they may be lurking just under the surface.

Lobsters are interesting mushrooms. They are a bright orange-red color, but that color is actually a parasitic fungus growing on an ordinarily nonedible white mushroom. The parasite turns the nonedible into a choice edible. Lobsters are meaty and very flavorful and are a great addition to any dish that calls for mushrooms.



## “LOBSTER” and GREEN BEAN SALAD with GOAT CHEESE

by David Yates • Serves 6

- 1 pound haricot vert or other slender green beans, ends trimmed**
- 4 tablespoons plus 3 tablespoons extra-virgin olive oil**
- 2 tablespoons balsamic vinegar**
- 1 tablespoon fresh thyme, chopped**
- Salt and pepper**
- 1 pound fresh lobster mushrooms, sliced**
- 1 large shallot, chopped**
- 3 ounces soft, mild goat cheese (such as Montrachet), crumbled**

Steam beans over water until crisp-tender, about 4 minutes. Drain. Transfer to bowl of ice water. Cool and drain well. Pat dry with paper towel. Set aside.

Whisk 4 tablespoons olive oil, vinegar

and thyme in small bowl. Add salt and pepper to taste. Set dressing aside.

Heat remaining 3 tablespoons oil in large skillet over medium heat. Add mushrooms and shallot. Sauté until mushrooms are brown and tender, about 8 minutes. Remove from heat.

Combine beans and mushrooms in a beautiful bowl. Pour dressing over all. Sprinkle with goat cheese and serve.



MAXINE STONE

## Mushroom Hunting Tips

There are a few things to remember when hunting edible mushrooms. These are the most important:

- › **CAUTION!** If you choose to eat wild mushrooms, safety should be your first concern. Never forget that some mushrooms are deadly, and never eat a mushroom that has not been positively identified. If you cannot positively identify a mushroom that you want to eat, take it to an expert. Neither the author nor the Missouri Department of Conservation can be responsible for the use or misuse of information in this article.
- › Don't take them all. Leave imperfect and old specimens. Leave small, immature specimens. Taking everything could mean fewer crops in the coming years.
- › Always cook your wild mushrooms. There may be unknown toxins or contaminants in them that will be destroyed by cooking.
- › The first time you eat a wild mushroom, put a few aside in your refrigerator. If you should have an allergic or poisonous reaction, an expert can use these samples for correct diagnosis and remedy.

# Chanterelles

When we've had a wet summer, there are so many other fall mushrooms to find. I am crazy about chanterelles. That's partly because they are bright orange and easy to find. But they also have a delicate, almost sweet taste. Some people think they smell like apricots. Chanterelles like our Missouri oak/hickory forests and, on a good day, you'll find lots of them in the woods near oaks. They go well with just about anything, but the simplest way to eat them is to just sauté them up and put in pasta or eggs, or just scoop them up with bread. Below is my granddaughter's simple recipe. It's fantastic.

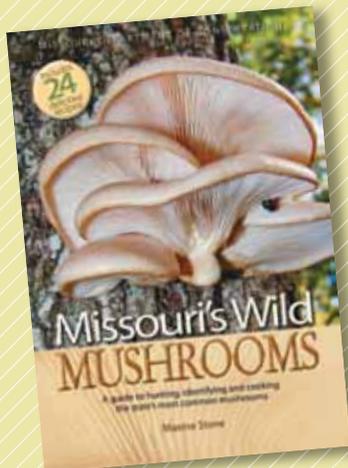


DAVID STONNER

## For More Information

Don't forget to pick up a copy of *Missouri's Wild Mushrooms: A guide to hunting, identifying and cooking the state's most common mushrooms*. In it you'll find lots of information, photos and recipes. The price is \$14 plus sales tax and shipping and handling. To order, call toll free 877-521-8632 or visit [www.mdcNatureShop.com](http://www.mdcNatureShop.com).

If you'd like more information on mushroom hunting and/or the Missouri Mycological Society, check out their website at [www.MoMyco.org](http://www.MoMyco.org).



## MORGAN'S CHANTERELLES

by Morgan Johnson

- 1–2 tablespoons butter
- 1 clove garlic, sliced
- 1 cup fresh chanterelles, torn into pieces
- Splash balsamic vinegar
- Salt and pepper
- Bread, pasta or rice

Melt butter with garlic and sauté until garlic is soft. Add chanterelles. Let them sauté for 4–5 minutes. Add a



STEVE ADAMS

splash of balsamic vinegar, and salt and pepper. Continue to cook until done. Serve over rice (good), pasta (better), or bread (best). Enjoy.



JON RAPP

## Oysters

Oysters are another mushroom that you may find in autumn. You have probably seen them at the grocery store, but wild ones that you find are far superior to the store-bought variety. Look for them after a good rain on logs and trunks of trees. The recipe below has been perfected. It's awesome.

### “OYSTERS” ROCKEFELLER

by David Yates • Serves 8

**2–3 cups oyster mushrooms, cut  
to resemble oyster shells**

**¾ cup beer**

**1 clove garlic**

**Salt**

**3–4 whole black peppercorns**

**2 tablespoons butter**

**1 onion, chopped**

**1 clove garlic, minced**

**1 10-ounce package frozen chopped  
spinach, thawed and drained**

**¼ cup Monterey Jack cheese, shredded**

**¼ cup fontina cheese, shredded**

**¼ cup mozzarella cheese, shredded**

**¼ cup milk**

**Salt and pepper**

**½ cup seasoned bread crumbs**

Put mushrooms in a large pot. Pour in beer and enough water to cover. Add garlic, salt and peppercorns. Bring to a boil and simmer for about 5 minutes. Remove from heat, drain, and cool. Arrange the oysters on a baking sheet.

Melt butter in a pan over medium heat. Cook onion and garlic in butter



STEVE ADAMS

until soft. Reduce heat to low, and stir in spinach, Monterey Jack, fontina, and mozzarella. Cook until cheese melts, stirring frequently. Stir in the milk, and season with salt and pepper. Spoon sauce over each oyster, as if you were filling a real oyster shell. Sprinkle with bread crumbs.

Bake 8–10 minutes at 425°, until golden and bubbly.



MAXINE STONE

## Chicken of the Woods

Then there are chicken of the woods. We grow two different choice species of “chix.” The sulphur shelf is bright orange on the top and bright yellow (like sulphur) on its underside. It grows on tree stumps and sometimes on the side of trees. As it ages it can get a bit woody, so just take the soft outer edges. The Cincinnatus is pale orange on the top and off-white to white on the underside. It is usually found on the ground clinging to roots. This species is tender all the way through to the center and the entire mushroom can be eaten. Both mushrooms are meaty and fabulous. They have the texture of chicken and can be used in any dish that calls for chicken.



MAXINE STONE

**“CHICKEN” with ROSEMARY AND GARLIC**  
*by Maxine Stone • Serves 8*

- 1 cup wild rice**
- 3 cups water**
- 2 tablespoons plus 1 tablespoon butter**
- 1 medium onion**
- 2 large garlic cloves**
- 2 cups Chicken of the Woods cleaned and sliced**
- ¼ cup sherry (or more!)**

- 1 sprig fresh rosemary**
- Salt and pepper**
- 1 tablespoon capers**

Boil the wild rice with 1 tablespoon butter and a pinch of salt, covered, on low heat for 55 minutes. Start preparing the remainder of the recipe about 15 minutes before the rice is done.

Split the onion down the center from the top, so that it separates into strips instead of rings, and slice. Crush or

chop the garlic. Sauté the mushrooms for 5–10 minutes, until almost tender. Add the onions and garlic, and sauté. Add the 2 tablespoons butter, sherry, rosemary, and salt and pepper to taste. Turn the heat down just a bit, and cook until the liquid has evaporated. Remove pan from the heat and toss in the capers.

Pile the wild rice onto a serving platter, pile the sautéed mushroom mixture on top, and serve.

## Blewits



JON RAPP

Blewits are a bit less common. They are a violet-tan color. They like open areas, paths and mulch piles. I found my first in a mulch pile in my backyard. That was a happy day! They have a delicate flavor and can be used well with pasta or grains.

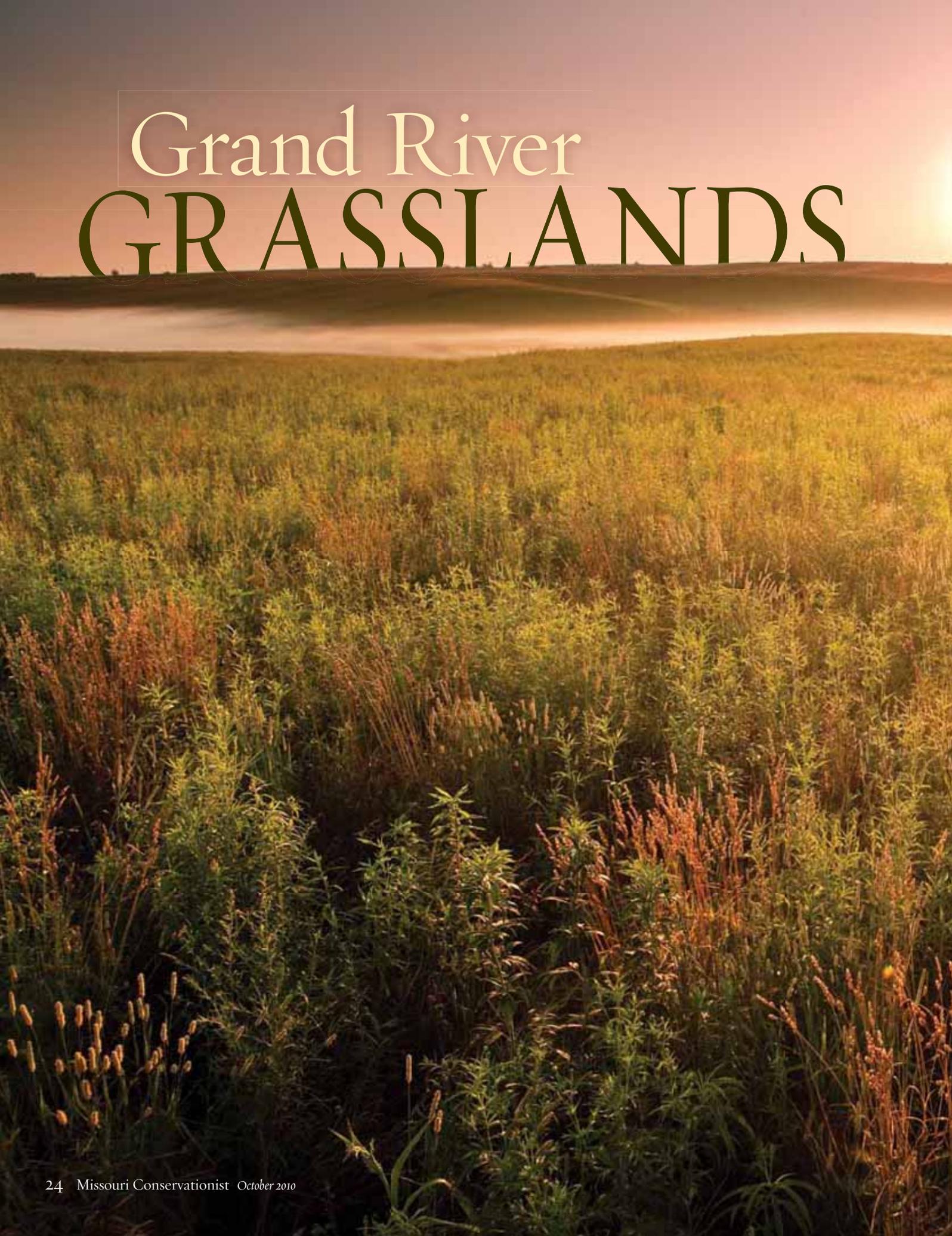
**If you find an edible mushroom but don't have a recipe for it, I always suggest cooking it up in some onion and butter. Sauté until it gives off its liquid and this liquid evaporates.**

## Black Trumpets

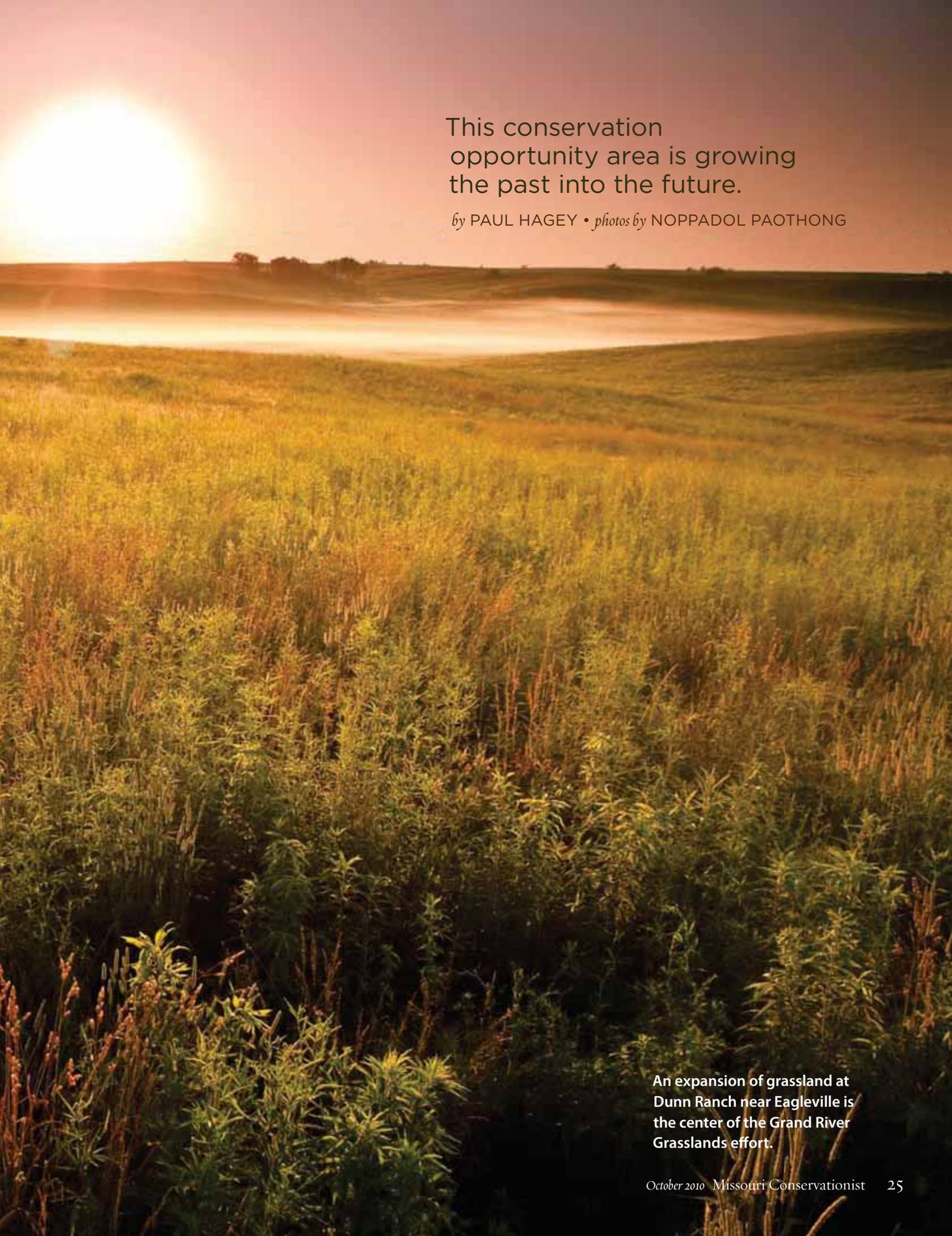
Black Trumpets are small, very dark and hard to see. But once you find one, you'll probably find a lot more. You may see your first in rocky, mossy hillsides. These mushrooms look fragile, but they are not. The taste is a little chewy and yet delicate. Since their color is so dark, they look beautiful in foods with contrasting color, such as scrambled eggs or squash soup.

MICHAEL KUO





# Grand River GRASSLANDS



This conservation  
opportunity area is growing  
the past into the future.

*by* PAUL HAGEY • *photos by* NOPPADOL PAOTHONG

**An expansion of grassland at  
Dunn Ranch near Eagleville is  
the center of the Grand River  
Grasslands effort.**

**I**n the Grand River watershed of northern Missouri and southern Iowa, spans the 10-year-old Grand River Grasslands Conservation Opportunity Area. On this approximately 70,000-acre area, the Missouri Department of Conservation is working with partners to recover a piece of Missouri's native past by rebuilding the tallgrass prairie.

Rather than conserving and managing scattered islands of public land, the Grand River Grasslands represents a new perspective of doing conservation on a scale that can significantly improve the natural health of a whole ecosystem. It is one of 36 conservation opportunity areas for all wildlife on which the Department of Conservation and partner organizations in Missouri are focusing their efforts.

### Prairie Partners

About 60 private landowners in the area participate in this project, in addition to the partnership of the Iowa Department of Natural Resources, The Nature Conservancy, the Missouri Conservation Heritage Foundation, the

Missouri Grassland Coalition, the U.S. Fish and Wildlife Service's Partners for Wildlife Program, Audubon Missouri and the Missouri Bird Conservation Initiative.

Iowa Department of Natural Resources wildlife biologist Chad Paup, who works in the Grand River Grasslands from the Iowa side of the border, puts it plainly, "They're the key. If we can't work with them [private landowners], we can't get anything done." Collaboration among the stakeholders defines this project, and they hope their efforts convince more and more landowners to participate in tallgrass prairie landscape-scale restoration.

### Prairie Remnants

"Much of this land has the potential for prairie restoration," says Dave Hoover, a Missouri Department of Conservation wildlife management biologist and one of the managers of the project. He gestures to the land spreading out into the Grand River Grassland expanse as we drive on the eastern border of Dunn Ranch, The Nature Conservancy's 4,000-acre portion of the Grand River Grasslands, one of the key components of the project. About two miles to the northwest of Dunn Ranch lies Pawnee Prairie, a 900-acre tract of mostly restored native prairie, portions of which are owned by the Department of Conservation and The Nature Conservancy.

"It's a high ridge which runs into Iowa. It's like 80 percent in grass of some sort already, with a number of remnant prairies in it," says Randy Arndt, the Nature Conservancy's Grand River Grasslands site manager, describing the layout of the project area, which is split roughly evenly by the Missouri/Iowa border. Although exotic grasses like fescue dominate acre upon acre of the land, in many places remnant tallgrass prairie lies dormant beneath it.

Big and little bluestem, sideoats grama and Indian grass form the core of this remnant, dormant past. Their seeds lie in the soil as the potential tall grasses for which this region's ecosystem gets its name: tallgrass prairie. These grasses compose the stage for a wildflower show that once performed in a third of Missouri each spring, summer and fall and now shows in a growing number of acres in the Grand River Grasslands. It begins with the light purples and light yellows of plants like prairie phlox and prairie coreopsis in the spring, proceeds through the deep purples of prairie blazing star and indigo bush in the summer and ends with the yellows of goldenrod and the light blue of downy blue gentian in the fall.

### Prairie Life

This show actually characterizes some of the dilemmas facing tallgrass prairie restoration in the Grand River Grasslands. Fescue, a non-native, cool-season grass,



Sedge wren



**Above: Pawnee Prairie, a few miles northwest of Dunn Ranch, is a 900-acre tract of mostly restored native prairie. Right: Greater prairie-chickens gather every morning at Dunn Ranch's booming ground during spring mating season.**

grows well in the fall and spring, but goes dormant in the summer and winter. While ranchers use it successfully to feed their livestock, it tends to form a monoculture, severely limiting the biodiversity of the land and choking out the prairie that lies dormant beneath it. It also reduces wildlife; for example, it forms a sod so thick that greater prairie-chicken chicks can't move through the dense grass or find their preferred food of insects and seeds.

The partners of Grand River Grasslands work to reestablish tallgrass prairie habitat for birds such as Henslow's sparrow, bobolink, upland sandpiper, Bell's vireo and bobwhite quail. Other species that benefit from restoration include the prairie mound ant, regal fritillary butterfly and great Saint John's-wort. These populations indicate that efforts to restore healthy, viable tallgrass prairie have been successful.

A much-publicized greater prairie-chicken population lives on a portion of Dunn Ranch's prairie, one of the few reliable populations in Missouri. Each April, a viewing



blind goes up at the Ranch where visitors can watch the chickens' mating dance and listen to males calling, referred to as "booming." Although the presence of the birds indicates a healthy prairie, they are just one facet of the Grand River Grasslands project. "The prairie-chicken is our poster child, so to speak," says Hoover.

## Deep Roots

On a November tour of Dunn Ranch and Pawnee Prairie given by Hoover and Kendall Coleman, a private land conservationist for the Conservation Department, we stop on a road dividing Pawnee Prairie and private land. The difference between the two is stark and clearly reveals the differences between introduced cool-season grass pastures and restored prairie. While gazing along the westward road, green fescue expands into the horizon on the pasture to the right; on the left side of the road, a golden-tan expanse of the restored tallgrass prairie of Pawnee Prairie. The contrast between green and golden-tan represent the different growing seasons of the grasses.

The tallgrass prairies of Dunn Ranch and Pawnee Prairie are small segments of the overall project area in Missouri. Dunn Ranch, which lies just northwest of Eagleville, encompasses about 4,000 continuous acres of conservation land, 1,000 of which comprise the Grand River Grasslands unplowed tallgrass prairie. This tract of virgin prairie marks the largest parcel of such prairie in a five-state region, and one of the major factors that led to the opportunity area's establishment in this location. It anchors, and in a way defines, the Grand River Grassland partners' efforts. "A lot of the critters that you don't find anywhere else are here, and so this is like the home base from where we hope to expand as we recreate prairie throughout the grassland," says Randy Arndt, manager of Dunn Ranch.

Unplowed prairie is significant and valuable to this project because of its plant composition. Tallgrass prairies evolved over millennia in this region. Tallgrass prairie plants have deep roots; about 50 to 70 percent of the plant lies below ground, which results in rich, deep soils as parts of that plant decomposes each year. "I guess the pioneers had a heck of a time plowing up the prairie," says Coleman.

## From the Ground Up

Like most ecosystems, tallgrass prairies develop slowly over many years, even with seeds already in the soil. The depth of the topsoil in recovered tallgrass prairie compared to virgin prairie illustrates some of its value. In recovered prairies, on land that has at one time been plowed, the topsoil is on average 6 to 8 inches deep; in unplowed prairie, the topsoil averages up to 30 inches or more. A bank of native seeds lives in that never-disturbed topsoil. "It's amazing how many years that seed will exist," says Coleman.

The rich, deep topsoils of tallgrass prairies led to their demise and helps explain why less than 1 percent of original tallgrass prairie remains in Missouri. In the presettlement era, tallgrass prairies covered a third of the



state. With settlement came the plow, exotic plant species, intensive grazing and fire suppression. All of these factors contributed to the disappearance of the tallgrass prairie, an ecosystem between the shorter Great Plains prairies to the west and the forests of the east. Enough rain falls in the region to support tree growth; however, due to the region's historical pattern of burning and grazing, it developed into grassland. Natural lightning fires and Native American-managed fires, along with the grazing of free-range bison, managed the prairie landscape before settlement. It wasn't until after the Civil War that most prairies began to be plowed in Missouri.

Grand River Grasslands work involves research on the technique and pattern of burning and grazing that best stimulates prairie growth. Iowa State University is in the third year of a multiyear study on the effects of various forms of patch-burn grazing on prairie, wildlife and livestock. This research will be used to provide concrete data and techniques to landowners in the Grand River Grasslands area who want to conserve and restore grasslands while maintaining their livelihoods. Ryan



**Rancher Robin Frank (right) works with Randy Arndt, The Nature Conservancy manager, on cost-share opportunities like native warm-season grass establishment that can benefit the approximately 4,000 acres he owns and the Grand River Grasslands.**

Harr, who heads the research program in the Grand River Grasslands, says this research is part of the project's larger goal of creating a sustainable grazing and farming future for the area by creating a resilient grassland ecosystem.

### **Cost-Share Opportunities**

On another part of the Grand River Grasslands tour, Coleman points out some tree-removal projects on private land near Pawnee Prairie. Only scattered dogwood thickets remain. They are part of a cost-share program where private landowners receive grant money that helps with conservation work on their land.

"As a rule, between 75 and 90 percent of [the landowner's] cost is covered by cost-share [in the Grand River



**Upland sandpiper**

Grasslands COA]," says Coleman. He has seen participation grow in the past five years. In 2008, 15 landowners participated in some sort of Grand River Grasslands cost-share program in Missouri, he says. When he started, only one participated.

Other cost-share programs include converting land to native warm-season grasses, which can benefit landowners in the long run. By restoring some of their land to native warm-season grasses, ranchers can establish a year-round grazing regime. Cool-season grasses like fescue go dormant in the summer at exactly the time that native tallgrasses go all out. "Whereas at that time of year [in summer], the native is doing its thing, it's going gangbusters" says Hoover.

The Grand River Grasslands project has been slow but exciting, say many of the partners. Hoover describes the gradual, but necessary steps to rebuilding a functioning prairie on a landscape scale like this: "It'd be like making a pizza. You've got the crust and each step you do is that much closer to a final product."

Rancher Robin Frank, who owns about 4,000 acres between Dunn Ranch and Pawnee Prairie, has been a part of that recipe by participating in tree removal and native warm-season grass establishment. "We have different goals," he says, "but we both end up going in the same direction at some point." Many people involved with the Grand River Grasslands project believe he is right. ▲

## Happy Holler Lake CA

Find good dove and archery deer hunting on this diverse area near Savannah.



IF YOU'RE IN the northwest region of the state this month, stop by Happy Holler Lake CA near Savannah. This 2,207-acre area is composed of three tracts, including a variety of wildlife habitat types, such as rolling forest, woodlands and wetlands.

These are maintained and improved through farming, prescribed burning, disking, and wetland and timber management. The result is a conservation area extremely high in natural diversity and outdoor recreation opportunities.

With good populations of dove and white-tailed deer, Happy Holler Lake CA is a good place to pursue fall hunting. Dove season runs through Nov. 9, and hunters may take a daily limit of 15 doves on the area. During the archery deer season, which runs through Nov. 12 and then again from Nov. 24, 2010, through Jan. 15, 2011, the four-point rule applies. Only portable tree stands are allowed on the area from September 1 through January 31.

Other game species, including wild turkey, pheasant, quail, rabbit, squirrel and waterfowl, may be pursued in season.

If you want to camp during your visit, you can pitch your tent in the grassy area next to one of nine parking lots scattered throughout the area's three sections. The parking lot at Happy Holler Lake has a disabled-accessible privy, but none of the lots have drinking water. Be sure to bring plenty of potable water, and plan to pack out waste and trash.

Boaters will find a disabled-accessible concrete boat ramp at Happy Holler Lake, as well as opportunities to canoe the area's ponds and the One Hundred Two River. Whether afloat or fishing from shore, anglers will find good populations of bass, catfish, crappie and sunfish to pursue.

Although the area has no designated hiking trails, it does have several access trails that can accommodate foot travel. These give birders, photographers and botanizers a chance to see and enjoy the area's wildlife, diverse habitat types and wildflowers.

Birders can expect to see great blue heron, yellow-billed cuckoo, Eastern wood peewee and great crested flycatcher. For a full list of bird species that frequent the area, visit the website address below.

As always, begin your visit with a trip to the area's website (listed below) for driving directions, regulations and a map.

—Bonnie Chasteen, photo by David Stonner

**Recreation opportunities:** Bird watching, camping, canoeing, fishing, hiking and hunting in season

**Unique features:** Happy Holler Lake (67 acres), several disabled-accessible ramps and docks and camping area with individual campsites

### For More Information

Call 816-271-3100 or visit [www.MissouriConservation.org/a8025](http://www.MissouriConservation.org/a8025).





# Hunting and Fishing Calendar

## FISHING

	OPEN	CLOSE
Black Bass (certain Ozark streams, see the <i>Wildlife Code</i> )	5/22/10	2/28/11
impoundments and other streams year-round		
Bullfrogs and Green Frogs	Sunset	Midnight
	6/30/10	10/31/10
Nongame Fish Giggling	9/15/10	1/31/11
Trout Parks	3/01/10	10/31/10

## HUNTING

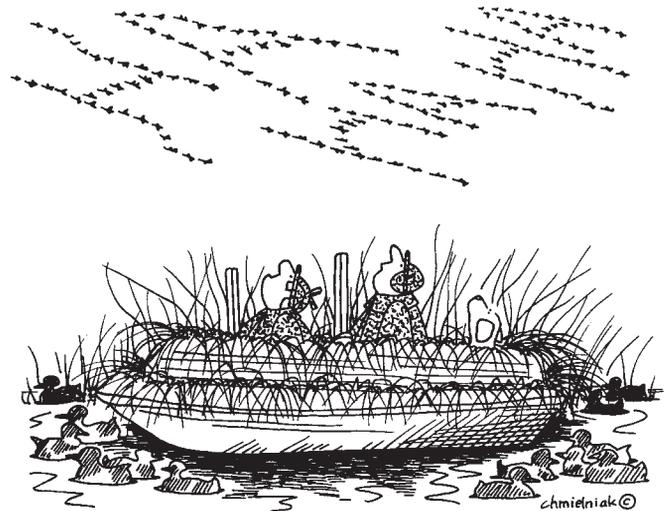
	OPEN	CLOSE
Coyotes	5/10/10	3/31/11
Deer		
Firearms		
Urban	10/08/10	10/11/10
Early Youth	10/30/10	10/31/10
November	11/13/10	11/23/10
Antlerless	11/24/10	12/05/10
Muzzleloader	12/18/10	12/28/10
Late Youth	1/01/11	1/02/11
Archery		
	9/15/10	11/12/10
	11/24/10	1/15/11
Doves	9/01/10	11/09/10
Furbearers	11/15/10	1/31/11
Groundhog	5/10/10	12/15/10
Pheasant		
Youth (North Zone only)	10/30/10	10/31/10
North Zone	11/01/10	1/15/11
Southern Zone	12/01/10	12/12/10
Quail	11/01/10	1/15/11
Youth	10/30/10	10/31/10
Rabbits	10/01/10	2/15/11
Rails (Sora and Virginia)	9/01/10	11/09/10
Squirrels	5/22/10	2/15/11
Turkey		
Fall Firearms	10/01/10	10/31/10
Archery	9/15/10	11/12/10
	11/24/10	1/15/11
Waterfowl	please see the <i>Waterfowl Hunting Digest</i> or see <a href="http://www.MissouriConservation.org/7573">www.MissouriConservation.org/7573</a>	
Wilson's (common) snipe	9/01/10	12/16/10
Woodcock	10/15/10	11/28/10

## TRAPPING

	OPEN	CLOSE
Beavers and Nutria	11/15/10	3/31/11
Furbearers	11/15/10	1/31/11
Otters and Muskrats	11/15/10	2/20/11

For complete information about seasons, limits, methods and restrictions, consult the *Wildlife Code* and the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, the *Fall Deer and Turkey Hunting Regulations and Information*, the *Waterfowl Hunting Digest* and the *Migratory Bird Hunting Digest*. For more information visit [www.MissouriConservation.org/8707](http://www.MissouriConservation.org/8707) or permit vendors.

The Department of Conservation's computerized point-of-sale system allows you to purchase or replace your permits through local vendors or by phone. The toll-free number is 800-392-4115. Allow 10 days for delivery of telephone purchases. To purchase permits online go to [www.wildlifelicense.com/mo/](http://www.wildlifelicense.com/mo/).



## Contributors

CHRIS CANIPE is a graduate student at the University of Missouri School of Journalism in Columbia. He's an occasional freelance writer and information graphics designer as well as a singer and songwriter. He enjoys playing Scrabble.



PAUL HAGEY, a recent graduate of the University of Missouri school of journalism, lived and wrote articles in and on the Ozarks for a brief time after graduation. He hopes to continue as a freelance writer of articles on natural history in his new home in Oakland, Calif.

October finds *Conservationist* staff writer JIM LOW chasing squirrels, woodcock, ducks, deer and turkey. He marvels at the technology behind large-caliber air rifles, but his personal preferences still run to flintlocks, shotguns and a bolt-action .30-06. It isn't autumn for him without the tang of burned powder in the air.



MAXINE STONE is past-president of the Missouri Mycological Society and serves on its board of directors. She is a passionate mycophile (someone who is fascinated by mushrooms), and loves studying and teaching mycology. She is a Master Gardener with the Missouri Botanical Garden and a Master Naturalist with the MDC.

## WHAT IS IT?

### Eastern hellbender

On the back cover and right is an Eastern hellbender by Noppadol Paothong. This is a large, harmless aquatic salamander. Both the Eastern and Ozark hellbenders are species of conservation concern that are raised in a Department hatchery and at the St. Louis Zoo. Propagation of these species is an integral part of an ongoing species recovery effort. In July the first propagated Eastern hellbenders were released into the Big Piney River. Read more about the Department's state-of-the-art hatcheries in the November issue.



## AGENT NOTES

### *Fall Mushroom Hunting in Missouri*

FALL IS A great time to enjoy the outdoors in Missouri. Mushroom hunting in the fall is a popular hobby, providing quality family outings and cherished memories for old and young alike. Success comes easier with preparation, forethought and a bit of experience. A few simple tools and supplies, along with basic knowledge of mushroom ecology and habitats, are all that is needed to get started. Fall mushroom species are as varied as the many shades of fall colors, and include such edibles as shaggy manes, puffballs, sulfur shelves, hen-of-the-woods and chanterelles.

Keep in mind a few tips when hunting for fall mushrooms. First of all, you'll need to know if they are edible or poisonous. Many mushrooms are perfectly harmless and can be a surprising treat from your normal table fare. Most edible mushrooms are easily recognizable with some practice, and most identification books will also give you tips on how to prepare them. It's very important to know the visual cues to look for, but knowing when and where a mushroom grows is very important in proper identification. However, the safest way to get acquainted with edible mushrooms is to take

one species at a time to learn, hunt and eat.

Mushroom hunting is an enjoyable and exciting experience for all but it does not authorize trespass. Be respectful of private property boundaries and always ask permission before mushroom hunting on private property. Most areas managed by the Missouri Department of Conservation allow mushroom collecting for personal consumption, but others don't. Don't be in violation of the *Wildlife Code*; know the area regulations before collecting.

For more information on mushroom identification visit your local MDC office or go online at [www.MissouriConservation.org](http://www.MissouriConservation.org) and search "mushrooms". Remember to enjoy the delicious-tasting treats you find, but more importantly enjoy the time spent with family and friends.



Chris Doran is the conservation agent for Howard County. If you would like to contact the agent for your county, phone your regional Conservation office listed on Page 3.

# WHAT IS IT?

Our photographers have been busy exploring the intricacies of the Missouri outdoors. See if you can guess this month's natural wonder. The answer is revealed on the inside of this back cover.



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[www.MissouriConservation.org/15287](http://www.MissouriConservation.org/15287)

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